ITU-T Workshop on Bridging the Standardization Gap and Interactive Training Session

(Cyberjaya, Malaysia, 29 June – 1 July 2010)

Business experiences in implementation of IPTV

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- KT IPTV Overview
- Service Implementations
- Platform Implementations
- Plans to implement

KT IPTV Overview

- Name: QOOK TV
- Subscribers: 1.2 millions+
- Coverage: the whole country (since Jan.2009)
- Classifications
  - ICOD*, using multicast-enabled qos-guaranteed ip network
  - D&P**, using best effort ip network
  - Hybrid, using ip & satellite network

*) ICOD : Internet Contents on demand
**) D&P : Download and play

Service Implementations

- Channel Service
  - Regional public/private broadcast channels: 40+ channels for 26 regions, 3 channels for each region
  - Video channels: 90+ channels (20+ HD channels)
  - Audio channels: 30+ channels
  - Data channels: 70+ channels

Service Implementations

- EPG
  - Implemented Mosaic, Grid, Mini EPG
  - Provide Grid, Mini EPG now.
  - Select program to watch or reserve

Service Implementations

- VOD Service
  - 90,000+ contents, 6 super groups
  - Free except last movies/series and tv dramas/shows

Channel Service Guide

VOD Service Guide

Data Service Guide

QOOK TV

실시간방송	마더
쿡TV 추천	그림자 살인
마이메뉴	트와일라잇
TV다시보기	가십걸 시즌2
영화/시리즈	13구역 : 얼티메이텀
키즈/애니	분노의 질주
교육	우리 집에 왜 왔니
음악/다큐/문화	7급 공무원
Fun&Life	내 남자의 아내도 좋아

Service Implementations

- VOD Service
  - Payment methods: can use coupon or point or mobile payment
  - Search functions: predictive, initial sound

Service Implementations

- Data Service
  - Information: weather, news, regional
  - Education: home-study materials
  - Entertainment: games, karaoke

Service Implementations

- Data Service
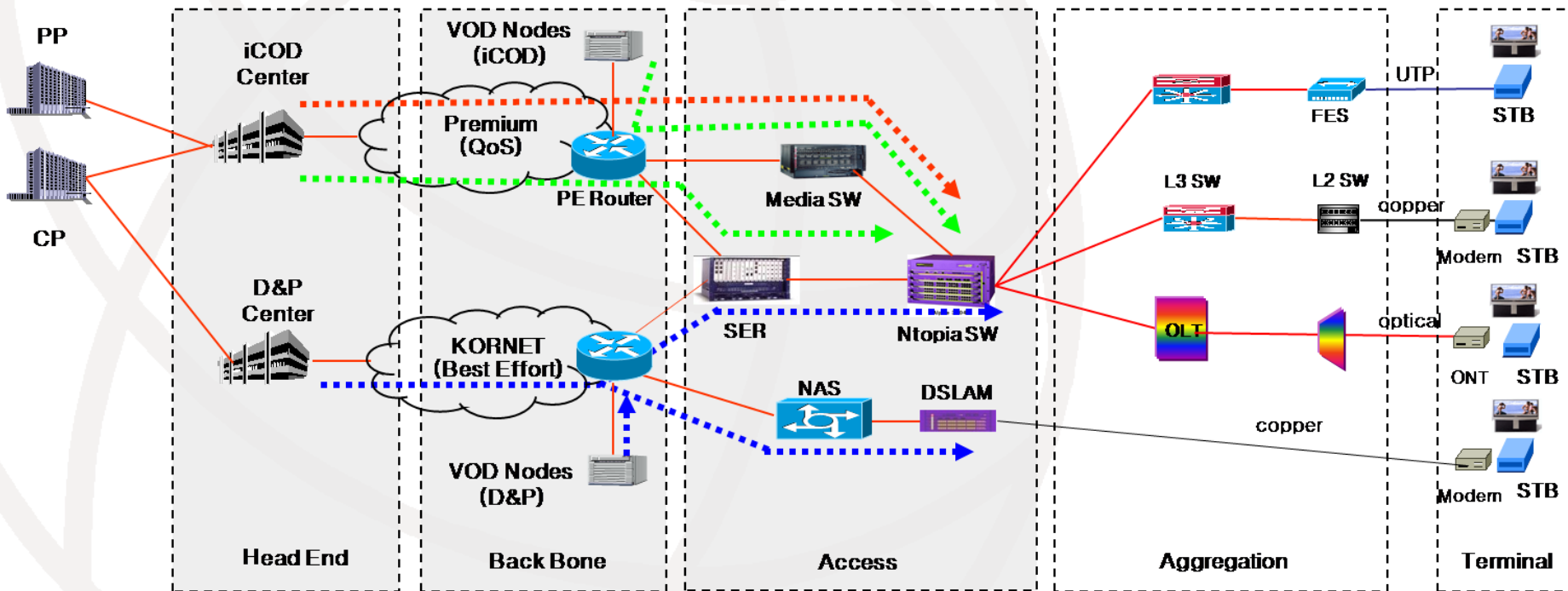 - Communication: chat, sms, video
  - Commerce: banking, shopping

Platform Implementations

■ E2E Architecture

Service	Channel	VOD(iCOD)	VOD(D&P)
Transfer	Muticast	Unicast	Unicast

Platform Implementations

- Features of KT's IPTV Head End
  - Transfer AV to Multicast Channel
    - Encoding: H.264, MPEG-2 AAC
    - Protocol: MPEG-2 TS over RTP
    - Scrambled or Clean AV
  - Transfer SI and EPG data to the specific Multicast Channel
    - DVB-SI tables: NIT, SDT, BAT, EIT (extended for IP network and service req.)
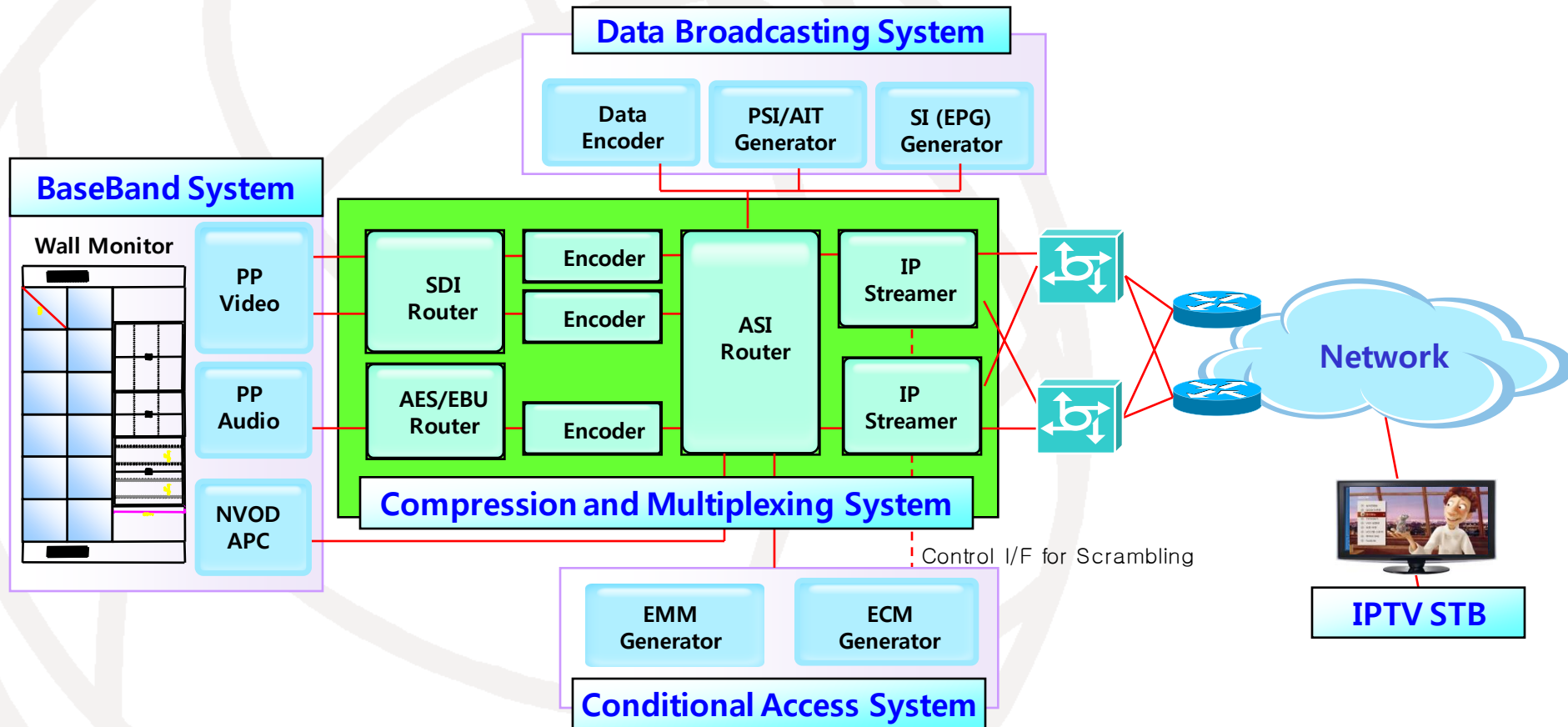   - No In-Band SI, STB can receive SI from the ATTS* channel

*) ATTS : Always Tuned Transport Stream

Platform Implementations

- Features of KT's IPTV Head End
  - Provide VOD Streaming or Download
    - Encoding: H.264, MPEG-2 AAC
    - Protocol: RTSP, FTP
    - Protection: CAS(streaming contents) or DRM(downloadable contents)
    - Forensic Watermark enabled
  - Provide Application and Data
    - Application: AIT for unbound/bound signal
    - Data: image(logo, advertise), menu, notice
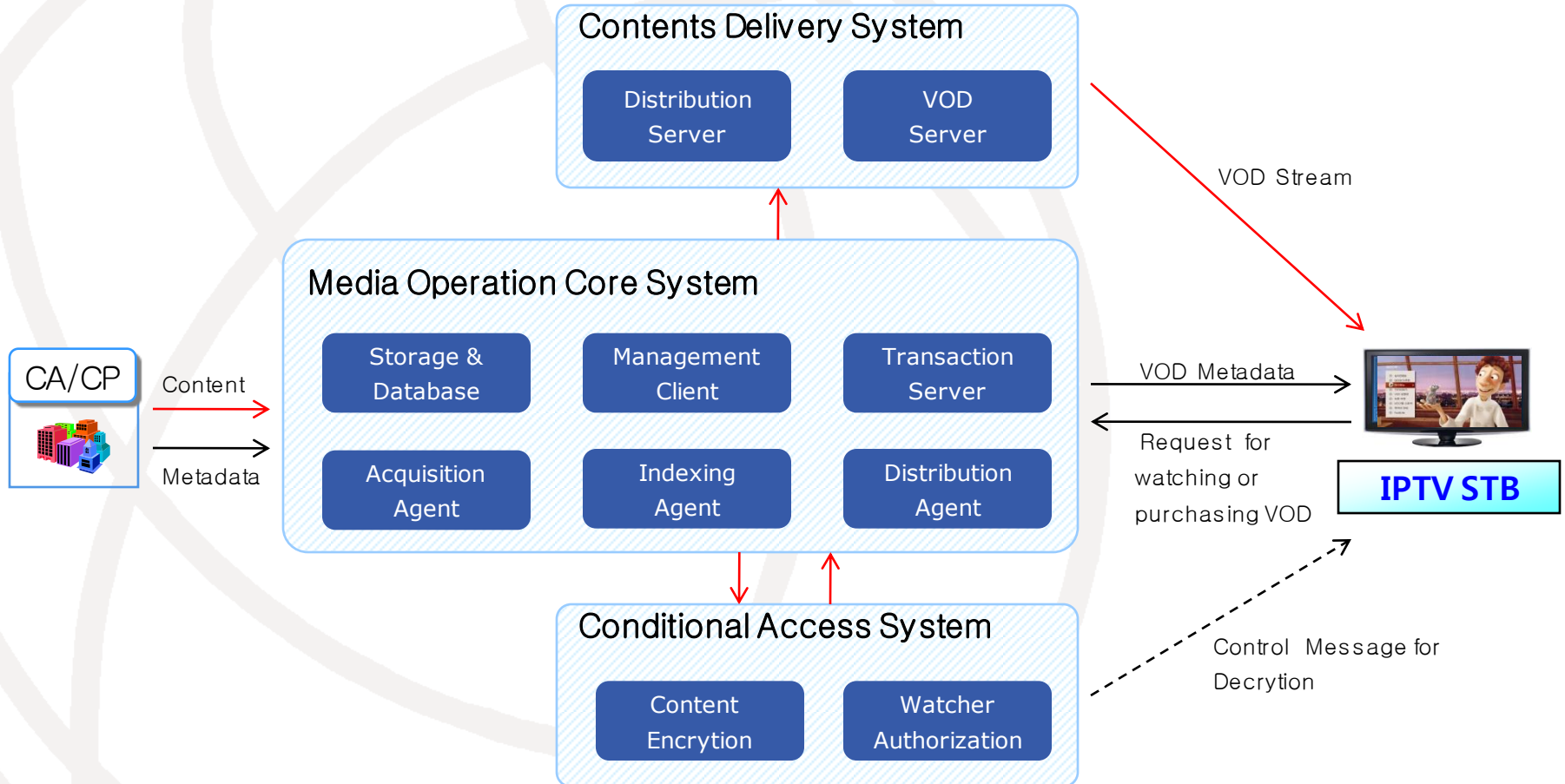   - Protocol: DSMCC(Object Carousel), HTTP

Platform Implementations

- ## Systems for Channel Services

Platform Implementations

- ## Systems for VOD Services

Contents Delivery System
- Distribution Server
- VOD Server

VOD Stream

Media Operation Core System
- Storage & Database
- Management Client
- Transaction Server
- Acquisition Agent
- Indexing Agent
- Distribution Agent

CA/CP
Content
Metadata

Conditional Access System
- Content Encrytion
- Watcher Authorization

VOD Metadata

Request for watching or purchasing VOD
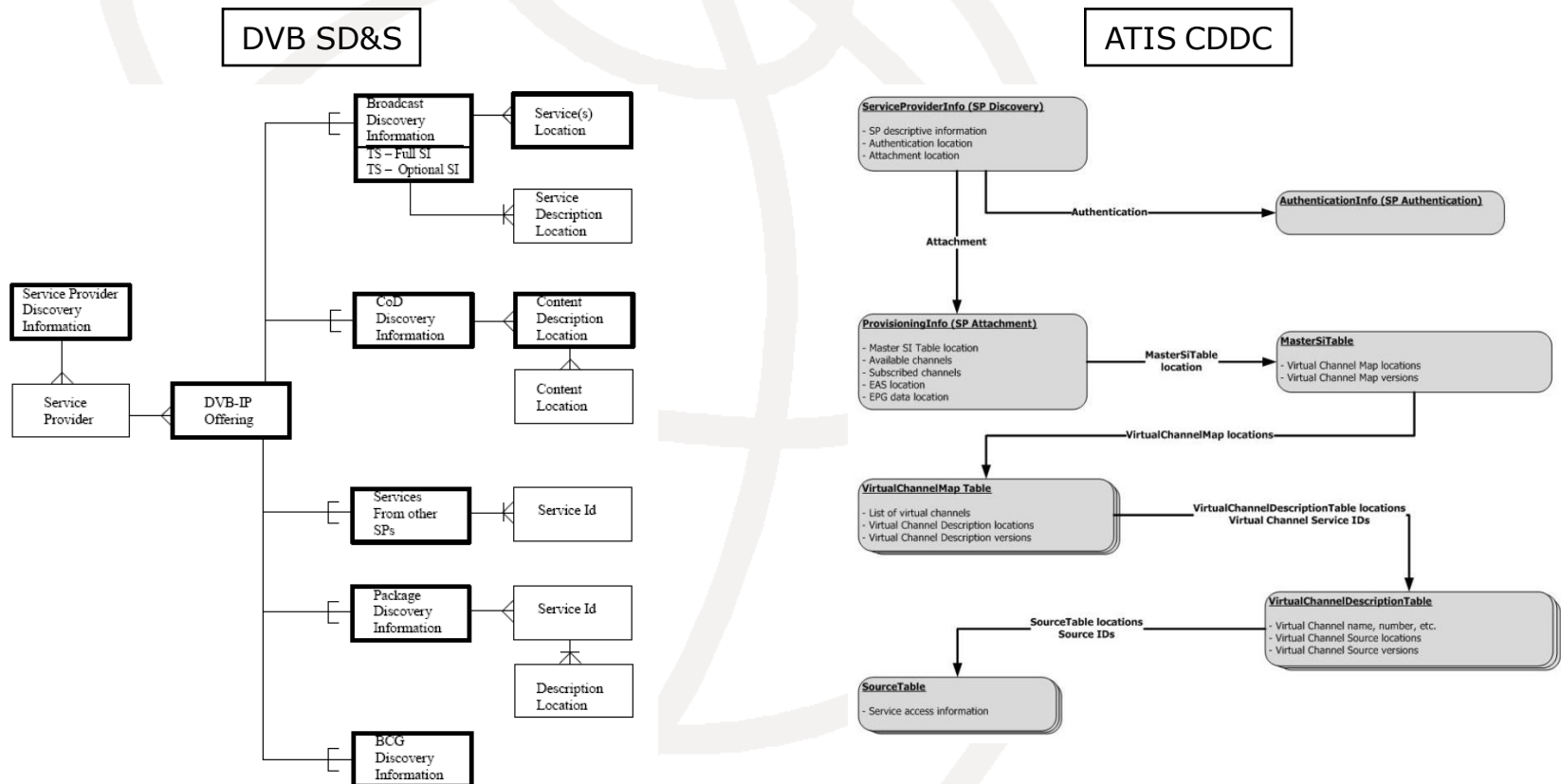
IPTV STB

Control Message for Decrytion

Plans to Implement

- **IPTV Service Discovery and Selection**
  - DVB SD&S or ATIS CDDC
- **IPTV CAS**
  - interchangeable and simulcrypt enabled
- **Open IPTV services**
  - Open Channel
  - Open VOD
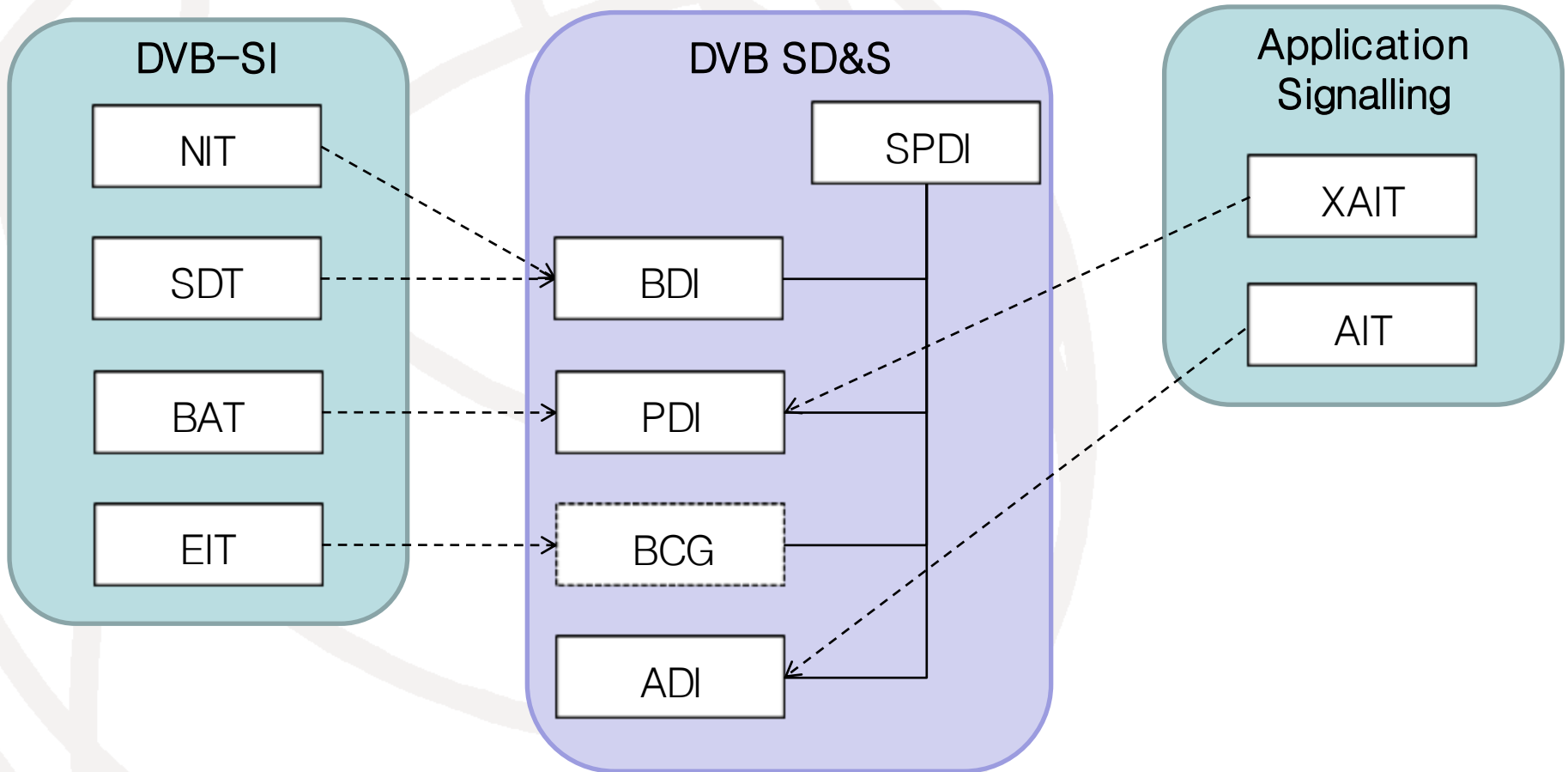 - TV AppStore

Plans to Implement

■ DVB SD&S or ATIS CDDC

Our viewpoint: more simple to implement and easy migration

Plans to Implement

- Migration from SI to SD&S

Plans to Implement

- ## SI descriptors and SD&S elements

DVB-SI			DVB SD&S	
Standard Descriptor	TAG	SI Table	SD&S Record	SD&S element/attribute
Bouquet name descriptor	0x47	BAT	PDI	Package/PackageName
Content descriptor	0x54	SDT	BDI	ServiceList/SingleService/SI/ContentGenre
Network name descriptor	0x40	NIT	SPDI	ServiceProvider@DomainName
Service descriptor	0x48	SDT	BDI	ServiceList/SingleService/SI@ServiceType ServiceList/SingleService/SI/Name
Multilingual service name descriptor	0x5D	SDT	BDI	ServiceList/SingleService/SI/Name@Language
Service list descriptor	0x41	BAT	PDI	Package/Service
Private Descriptor	TAG	SI Table	SD&S Record	SD&S element/attribute
IP delivery system descriptor	0x80	NIT	BDI	ServiceList/SingleService/ServiceLocation/IPMulticastAddress
logical channel descriptor	0xE2	BAT	PDI	Package/Service/LogicalChannelNumber

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Plans to Implement

■ Customized IPTV Service Discovery

0. Provisioning
   - Get entry point and subscriber's package id.

1. Service Provider Discovery
   - Search offering for subscriber's package whose segment id is the subscriber's package id.
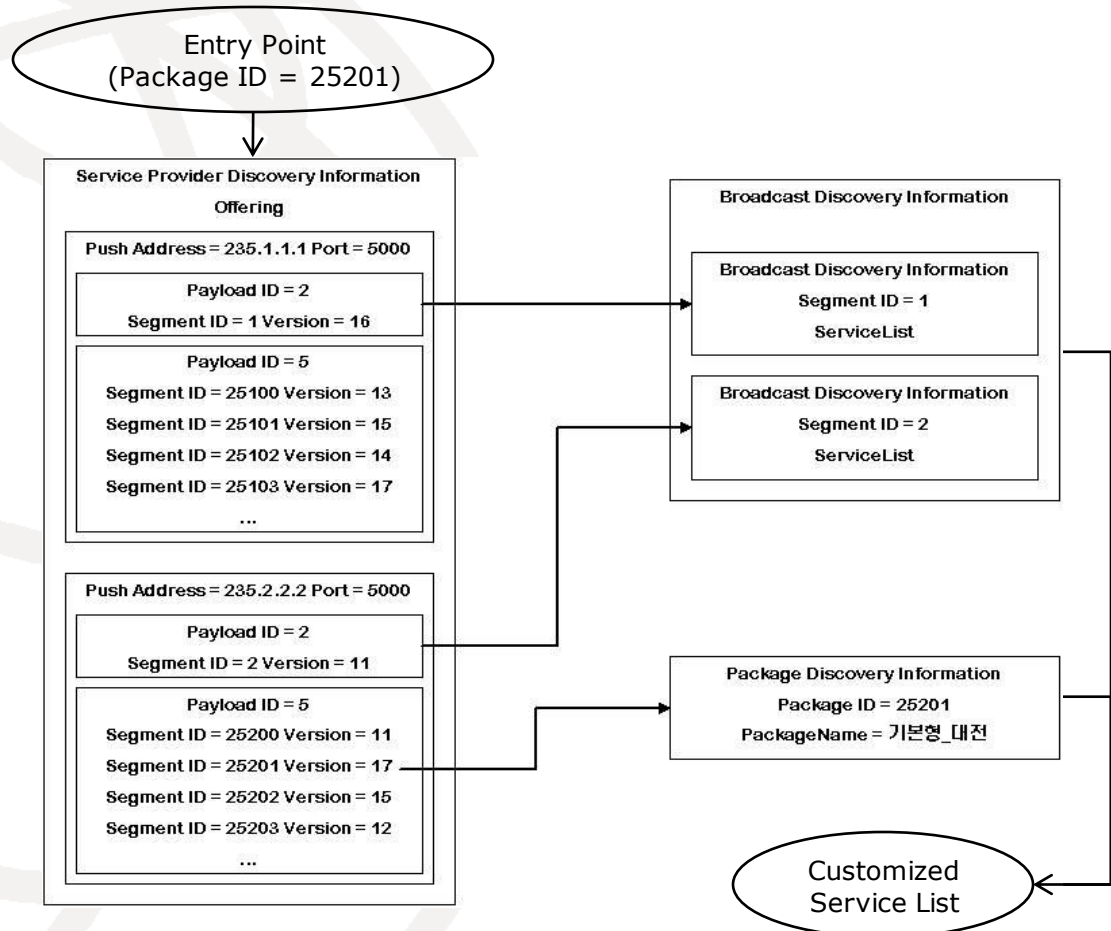
2. Package Discovery
   - Get service list of the subscriber's package.

3. Broadcast Discovery
   - Get service information of the subscriber's package.

4. Configure Customized Service List

Q&A

- Thank you for your patience
- Contact info. for more questions
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